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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,489	02/22/2002	Bernd Niethammer	01-0401	9328

7590 03/25/2003

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EXAMINER

SOLAK, TIMOTHY P.

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/079,489	NIETHAMMER, BERND	
	Examiner Timothy P. Solak	Art Unit 3746	
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>			
<b>Period for Reply</b>			
<b>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</b>			
<ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> <li>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</li> </ul>			
<b>Status</b>			
1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>22 February 2002</u> .			
2a) <input type="checkbox"/> This action is <b>FINAL</b> .		2b) <input checked="" type="checkbox"/> This action is non-final.	
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.			
<b>Disposition of Claims</b>			
4) <input checked="" type="checkbox"/> Claim(s) <u>1-20</u> is/are pending in the application.			
4a) Of the above claim(s) _____ is/are withdrawn from consideration.			
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.			
6) <input checked="" type="checkbox"/> Claim(s) <u>1-20</u> is/are rejected.			
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.			
8) <input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.			
<b>Application Papers</b>			
9) <input checked="" type="checkbox"/> The specification is objected to by the Examiner.			
10) <input checked="" type="checkbox"/> The drawing(s) filed on <u>22 February 2002</u> is/are: a) <input type="checkbox"/> accepted or b) <input checked="" type="checkbox"/> objected to by the Examiner.			
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).			
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner.			
If approved, corrected drawings are required in reply to this Office action.			
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.			
<b>Priority under 35 U.S.C. §§ 119 and 120</b>			
13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).			
a) <input type="checkbox"/> All b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of:			
1. <input type="checkbox"/> Certified copies of the priority documents have been received.			
2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.			
3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).			
* See the attached detailed Office action for a list of the certified copies not received.			
14) <input checked="" type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).			
a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.			
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.			
<b>Attachment(s)</b>			
1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)		4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.	
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)	
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.		6) <input type="checkbox"/> Other: _____.	

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**DETAILED ACTION**

***Drawings***

Figure 1A should be designated by a legend such as --Prior Art-- because only that which is old (see page 2, line 6) is illustrated. See MPEP § 608.02(g).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "IPR" in Figures 2-4.

The Figures are objected to for informal lettering and improper margins. Formal drawings are required to overcome this objection.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "multitude of volumes" (Claim 14, line 7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because it is too short and non-descriptive of the invention. The abstract does not contain enough information, so that one of ordinary skill in the art, can determine the significance of the invention. Correction is required. See MPEP § 608.01(b).

Recitation of "shot to shot" in line 3 of the abstract is not clear in context and undefined by the disclosure.

The disclosure is objected to because of the following informalities:

Recitation of "three pumps" on page 2, line 8, should be written as --two pumps--.

Recitation of "Having thus described...is as follows:" on page 9, line 1-2, should be written as --I Claim:--. The Claims must be separate from the disclosure and start a new page.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Multiple Stage Pump with Multiple External Control Valves.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-17 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Recitation of "to supply the each pump stage with fluid" is not clear in context. There is no disclosure about supplying fluid to the pump stages. Should this be written as --supplying fluid to the injectors--?

Recitation of "the check valves regulate switching" in Claim 15, line 5, renders the claim indefinite. A "check valve" only stops or allows flow, it is incapable of performing the steps/functions ascribed thereto (regulate). In addition, the claims are drawn to an apparatus

-method step in an apparatus claim render the scope of the claims indefinite. (Is your invention the apparatus, or a method?)

Claims 14-17 and 19-20 seem to be directed towards the supply side of the pump. The disclosed invention is related to controlling the pressure of a multiple stage pump via valves located on the discharge side of the pump. The relationship between the disclosed invention and Claims 14-17 and 19-20 is not clear rendering the metes and bounds of the claims undefined. Accordingly, these claims have not been treated in the art rejections. However, this is not to be presumed as an indication of allowable subject matter.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 6, 8-10 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Numazawa et al. (4,599,051). Numazawa et al. teach a multiple stage pump comprising: a first pump (defined by its discharge OP2), a second pump (defined by its discharge OP4), at least one flow control valve V2 upstream of the first pump or the second pump and a common branch line (not labeled but clearly seen in Figure 2). Numazawa et al. further disclose a second valve V3 upstream of the second pump. Numazawa et al. teach the spring biased solenoid valve V2 will fail open (see Figure 2 and column 4, lines 1-5).

Claims 1, 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoyama (5,199,854). Aoyama teaches a multiple stage pump comprising: a first pump 34A, a second

pump 34B, at least one valve 39A upstream of the first pump or the second pump and a common branch line (not labeled but clearly seen in Figure 1, upstream of valves 39A and C). Aoyama further discloses a second valve 39C upstream of the second pump. Aoyama further teaches two check valves 39A/C and at least three valves “associated” with both the first stage (valves 39A, 42 and 43) and the second stage (valves 39C, 42 and 43).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Numazawa et al. (mentioned previously), in view of Mickelson (4,787,204). Although Numazawa et al. teach most of the limitations of the claims, including a multistage pump with at least one valve upstream of a stage and a valve system 40 “associated” with a common branch line (column 3, lines 40-43); they do not disclose two valves in the same line. It was old and well known in the art of pump fabrication to use valves in a hydraulic system and using two valves in the same line advantageously increased isolation units. Mickelson, disclosing a hydraulic system, specifically teaches two valves 28/30 in a discharge line of one of two pumps 12/14 prior to a common branch line 48. Mickelson teaches the multiple valves adventitiously consolidated the system (column 1, lines 40-45). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have used the two valves in the single line as taught by

Mickelson, in the pump disclosed by Numazawa et al., to have advantageously consolidated the unit.

Claim 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numazawa et al., in view of Mickelson (both mentioned previously). Although the combination of prior art teaches most of the limitations of the claims, including two valves in a single discharge line of multiple stage pump, they do not disclose two valves in each discharge line. It was old and well known in the art of pump fabrication to use valves in a hydraulic system and using two valves in the same line advantageously increased isolation units. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have used two valves in each line, in the pump disclosed by Numazawa et al., to have advantageously increased the isolation units.

Claim 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numazawa et al. (mentioned previously). Although Numazawa et al. teach most of the limitations of the claims, including controllable solenoid operated valves (column 4, lines 38-45) used to control the pressure (column 2, lines 1-15) in a multiple stage pump, they do specifically teach a pressure control or relief valve. It was old and well known in the art of pump fabrication that a common control circuit can be configured in variety of fashions to advantageously increase the utility of the unit; such as to control the pressure by relieving fluid as taught by Numazawa et al. (column 2, lines 1-15). Therefore, it would have been obvious to one of ordinary skill in the art,

at the time the invention was made, to have used the valves taught by Numazawa et al. as pressure or relief valves, to have advantageously increased the utility of the unit.

***Conclusion***

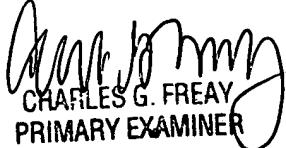
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Saiga (5,163,542) teaches a multistage pump with a discharge control valve.
- Hicks et al. (4,142,842) teach a multistage pump with check valves in a branch line.
- Lauvin (5,458,103) teaches a multistage pump in a fuel injection system.
- McCandless (5,357,929) teaches a multistage pump with control valves in an injection system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy P. Solak whose telephone number is 703-308-6197. The examiner can normally be reached on Monday through Thursday from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 703-308-0102. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

  
March 20, 2003

  
CHARLES G. FREAY  
PRIMARY EXAMINER